AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A method for controlling a service at a center system, wherein via a network, the center system is connected to a host computer, a storage subsystem and a switch whose ports are physically connected to an I/O controller of the host computer and ports of the storage subsystem, the method comprising:

receiving a request for establishing a logical data I/O path between the host computer and the storage subsystem via the switch;

directing the switch and the storage subsystem to assign at least one port for the logical data I/O path;

making account information based upon at least the number of ports assigned at the switch; wherein the center system is operable to receive a storage allocation demand from the host computer and, in response to the received demand, to allocate storage resources within the storage subsystem to the host computer.

2. (*Original*) The method of claim 1, wherein

the account information is made from the number of ports assigned at the storage subsystem.

3. (*Original*) The method of claim 1, further comprising:

sending a message to the storage subsystem to request storage resources;

receiving from the storage subsystem a result, the result indicating whether storage resources have been successfully allocated in accordance with the message;

sending a message to a SAN switch to request an I/O path between a host computer requesting storage and the storage subsystem;

receiving from the SAN switch a result, the result indicating whether the I/O path has been successfully established in accordance with the message; and

updating account information based upon results received from the storage subsystem and the SAN switch.

4. (*Currently Amended*) A storage management service system, comprising:

at least one storage subsystem;

a storage infrastructure on demand (SIoD) center system computer operable to receive a storage allocation demand from one or more host computers and, in response to the received demand, to allocate storage resources within the at least one storage subsystem to the one or more host computers;

~~at least one storage subsystem;~~

a switch, operative to connect the at least one storage subsystem to the one or more host computers; wherein:

the storage subsystem, the SIoD center system computer, and the switch are interconnected to share information;

the SIoD center system computer receives input of a request for establishing a logical data I/O path between the at least one storage subsystem and one or more host computers via the switch;

the SIoD center system computer forwards the request to the switch;

the switch establishes a connection between at least two ports, including a first port and a second port, the first port being connectable to a host computer, and the second port being connected to the at least one storage subsystem; and

at least one of the storage subsystem, the SIoD center system computer, and the switch makes account information based on at least upon a number of ports assigned.

5. (*Original*) The system of claim 4, wherein

the account information comprises at least one of:

payment information to one or more vendors, the vendors providing at least one of:

storage subsystem access, network access, and SAN switch access; and

billing information to one or more customers.

6. (*Original*) The system of claim 4, wherein

the host computer and the storage subsystem are connected directly by physical and logical connections made between at least one of a plurality of host I/O controllers and at least one of a plurality of subsystem I/O ports via a SAN switch.

7. (*Original*) The system of claim 6, wherein

the physical and logical connections are made by zoning definitions between ports in the SAN switch connectable to the at least one of a plurality of subsystem I/O ports of the storage subsystems and the at least one of a plurality of host I/O controllers of the host computers.

8. (*Original*) The system of claim 6, wherein the SAN switch comprises at least one of a fibre channel network switch, an IP switch.

9. (*Original*) The system of claim 6, wherein

one or more host computers of one or more customers are connected to one or more storage subsystems of one or more vendors via the SAN switch of a first vendor that makes at least one connection between at least one host I/O controller of the one or more host computers and at least one subsystem I/O ports of the one or more storage subsystems.

10. (*Original*) The system of claim 9, wherein

the SIoD center system of a second vendor tracks port connection information for preparing billing and/or payment information for customers and/or vendors.

11. (*Currently Amended*) An apparatus comprising:

storage infrastructure on demand (SIoD) center system means for receiving a request for storage and for allocating the storage in response to the received request;

means for establishing at least one logical connection between a user of storage and a provider of storage responsive to the request;

means for determining a number of resources allocated to establish the logical connection; and

means for tracking account information for at least one of the user of storage and the provider of storage.

12. (*Original*) The apparatus of claim 11, wherein

the storage comprises at least one of magnetic disk, an optical disk, a magnetic-optical disk, and a semiconductor memory.

13. (*Original*) The apparatus of claim 11, further comprising:

means for communicating instructions to the providers of storage;

interface to a network;

means for communicating instructions to providers of connection services between storage and user; and

means for communicating account information to the users and/or the providers.

14. (*Original*) The apparatus of claim 11, further comprising:

means for communicating instructions to a SAN switch, the SAN switch providing capability to connect host computers to storage subsystems.

15. (*Currently Amended*) A method <u>for controlling allocation of storage at a center system, the method</u> comprising:

receiving a request for establishing a logical data I/O path between a requestor of storage and a provider of storage;

directing a request for a connection between the requestor of storage and the provider of storage to a provider of switching connections; and

making account information based upon at least a number of ports assigned in making the connection; wherein the center system is operable to receive a storage allocation demand from the requestor of storage and, in response to the received demand, to allocate storage resources within the provider of storage.

16. (*Original*) The method of claim 15, further comprising:

directing a request for storage resources between to a provider of storage resources.

17. (*Original*) The method of claim 16, further comprising:

updating SAN switch resource management information; and

updating storage subsystem resource management information.

18. (*Original*) The method of claim 17, wherein:

making account information based upon at least a number of ports assigned in making the connection comprises:

preparing billing information to customers and preparing payment information to vendors based upon the SAN switch resource management information.

19. (*Original*) The method of claim 17, wherein:

making account information based upon at least a number of ports assigned in making the connection comprises:

preparing billing information to customers and

preparing payment information to vendors based upon the storage subsystem resource management information.

20. (*Currently Amended*) A computer program product for controlling a service at a center system, wherein via a network, the center system is connected to a host computer, a storage subsystem and a switch whose ports are physically connected to an I/O controller of the host computer and ports of the storage subsystem, the computer program product comprising:

code for receiving a request for establishing a logical data I/O path between a requestor of storage and a provider of storage;

code that directs a request for a connection between the requester of storage and the provider of storage to a provider of switching connections;

code that makes account information based upon at least a number of ports assigned in making the connection; and

a computer readable storage medium for holding the codes; wherein the center system is operable to receive a storage allocation demand from the host computer and, in response to the received demand, to allocate storage resources within the storage subsystem to the host computer.